



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/099,873	03/15/2002	Michael R. Wells	1684-4189US (484-15631-US)	4455
24247	7590	12/19/2003	EXAMINER	
TRASK BRITT P.O. BOX 2550 SALT LAKE CITY, UT 84110			GAY, JENNIFER HAWKINS	
			ART UNIT	PAPER NUMBER

3672

DATE MAILED: 12/19/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

SW

Office Action Summary

Application No. 10/099,873		Applicant(s) WELLS ET AL.	
Examiner Jennifer H Gay		Art Unit 3672	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 03 November 2003.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-29 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-29 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 03 November 2003 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
 Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
 Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. §§ 119 and 120

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
 a) ☐ All b) ☐ Some * c) ☐ None of:
 1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
 * See the attached detailed Office action for a list of the certified copies not received.
- 13) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application) since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.
 a) ☐ The translation of the foreign language provisional application has been received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121 since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.

Attachment(s)

- | | |
|----------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) Paper No(s). _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Claim Rejections - 35 USC § 102

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

2. Claims 1-3, 5, 6, 19, and 20 are rejected under 35 U.S.C. 102(b) as being anticipated by Lebourg (US 3,621,924).

Regarding claims 1-3, 5, 6, 19, and 20: Lebourg discloses a core bit assembly that includes the following features:

- An outer barrel (21) having one end attached to a drill string (11).
- An inner barrel (29) rotatably disposed inside the outer barrel and including an inner tube (47) and a core shoe (69) attached to one end of the tube.
- A core bit (30, see Figure 1B) attached to the outer barrel near the core shoe. The bit includes the following features:
 - A body having a face with a throat therein; the throat extends to a longitudinal cavity.
 - A cutter located on the face.
 - A port outlet on the face.
 - A bore (59 and 68) extending through the body with one end in communication with the outlet.
 - A port inlet (20) that is conical in shape with a first end having a first cross-sectional area joined to end opposite the outlet and extending to a second end having a second cross-sectional area larger than the first cross-sectional area.

Claim Rejections - 35 USC § 103

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. Claims 4, 7, and 21 are rejected under 35 U.S.C. 103(a) as being unpatentable over Lebourg (US 3,621,924).

Lebourg does not specifically disclose that the port inlet has a pyramidal shape. However, it would have been an obvious matter of design choice to formed the port inlet of Lebourg with a pyramidal shape, since applicant has not disclosed that the pyramidal shape solves any stated problem or is for any particular purpose and it appears that the invention would equally well with either the conical shape or the pyramidal shape.

5. Claims 12-16 and 24-29 are rejected under 35 U.S.C. 103(a) as being unpatentable over Lebourg (US 3,621,924) in view of applicant's admitted prior art (AAPA).

Regarding claims 12-16: Lebourg discloses a core bit assembly that includes the following features:

- An outer barrel (21) having one end attached to a drill string (11).
- An inner barrel (29) rotatably disposed inside the outer barrel and including an inner tube (47) and a core shoe (69) attached to one end of the tube.
- A core bit (30, see Figure 1B) attached to the outer barrel near the core shoe. The bit includes the following features:
 - A body having a face with a throat therein; the throat extends to a longitudinal cavity.
 - A cutter located on the face.
 - A port outlet on the face.

- A bore (59 and 68) extending through the body with one end in communication with the outlet.
- A port inlet (20) that opens into the longitudinal cavity defining an annular reservoir with a first volume between the inside wall of the cavity and the outside wall of the core shoe.

Lebourg discloses all of the limitations of the above claims except for the annular reservoir being configured to induce fluid restriction and recirculation zones in fluid passing therethrough.

Figure 7, which has been indicated as prior art, of the instant application shows an area at the intersection of a cavity (42 and 44) and a narrow annuls (74) that defines an annular reservoir (80). The annular reservoir includes a surface feature that is a slight obstruction that would cause fluid resistance and recirculation. The surface feature has a triangular cross-section relief.

It would have been considered obvious to one of ordinary skill in the art, at the time the invention was made, to have modified Lebourg such that the annular reservoir was configured to induce fluid recirculation zones in the fluid passing therethrough as taught by AAPA in order to have provided a means for reducing the deposit of sediment from the drilling fluid at the point of the fluid split. One would have been motivated to make such a combination because a means for preventing the fluid channel from becoming blocked would have been obtained.

Regarding claims 24-29: Lebourg discloses a method for reducing fluid flow through the above bore (59 and 68). The method involves the following steps:

- Enlarging the cross-sectional area of the port inlet relative to the cross-sectional of the bore.
- Receiving fluid through the port and into the bore.

Lebourg discloses all of the limitations of the above claims except for the annular reservoir being configured to induce fluid restriction and recirculation zones in fluid passing therethrough.

Figure 7, which has been indicated as prior art, of the instant application shows an area at the intersection of a cavity (42 and 44) and a narrow annuls (74) that defines an

annular reservoir (80). The annular reservoir includes a surface feature that is a slight obstruction that would cause fluid resistance and recirculation. The surface feature has a triangular cross-section relief.

It would have been considered obvious to one of ordinary skill in the art, at the time the invention was made, to have modified Lebourg such that the annular reservoir was configured to induce fluid recirculation zones in the fluid passing therethrough as taught by AAPA in order to have provided a means for reducing the deposit of sediment from the drilling fluid at the point of the fluid split. One would have been motivated to make such a combination because a means for preventing the fluid channel from becoming blocked would have been obtained.

Response to Arguments

6. In view of applicant's amendment, the objections to the drawings have been withdrawn.

7. The examiner notes that she rejected claims 4, 7, and 21 in the previous Office Action as being an obvious matter of design choice. Applicant has not traversed this rejection thus the examiner assumes applicant agrees with this statement.

8. In response to applicant's argument that Lebourg does not teach a flow path defined by the annular channel 68 proximate the port inlet, an approach angle of a port inlet relative thereto, or an annular region configured to induce fluid recirculation zones in fluid passing therethrough, the examiner agrees.

9. In response to applicant's arguments regarding Radford, i.e. that Radford does not teach a surface feature disposed in the wall of the cavity that is configured to individually impart resistance to fluid flow in a narrow annulus or that Radford does not teach imparting circumferential flow to fluid collecting in an annular region in fluid communication with the narrow annulus, the examiner agrees. The examiner does not, however, that Radford, which discloses a core bit, would teach at least one cutter disposed on the face surface of the bit body.

10. Applicant's arguments filed 3 November 2002 have been fully considered but they are not persuasive.

Art Unit: 3672

In response to applicant's argument that the channel "59" does not extend through the core bit between channel "20" and the face thereof, the examiner disagrees. As seen in Figures 1A and 1B, channel "20" and channel "59" are connected and channel "59" extends through the face of the bit.

In response to applicant's argument that the references fail to show certain features of applicant's invention, it is noted that the features upon which applicant relies (i.e., that channel "20" of Lebourg is not formed along the inner diameter of the core bit) are not recited in the rejected claim(s). Although the claims are interpreted in light of the specification, limitations from the specification are not read into the claims. See *In re Van Geuns*, 988 F.2d 1181, 26 USPQ2d 1057 (Fed. Cir. 1993). Further, channel "20" is clearly shown to be within the body of the bit.


In response to applicant's argument that channel "59" does not change in cross section, the examiner notes that she has not indicated that channel "59" had a differing cross section but referred to element "20" for this feature.

Conclusion

11. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Jennifer H Gay whose telephone number is (703) 308-2881. The examiner can normally be reached on Monday-Thursday, 6:30-4:00 and Friday, 6:30-1:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, David Bagnell can be reached on (703) 308-2151. The fax phone number for the organization where this application or proceeding is assigned is (703) 872-9306.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-1113.


David Bagnell
Supervisory Patent Examiner
Art Unit 3672

JHG 
December 15, 2003